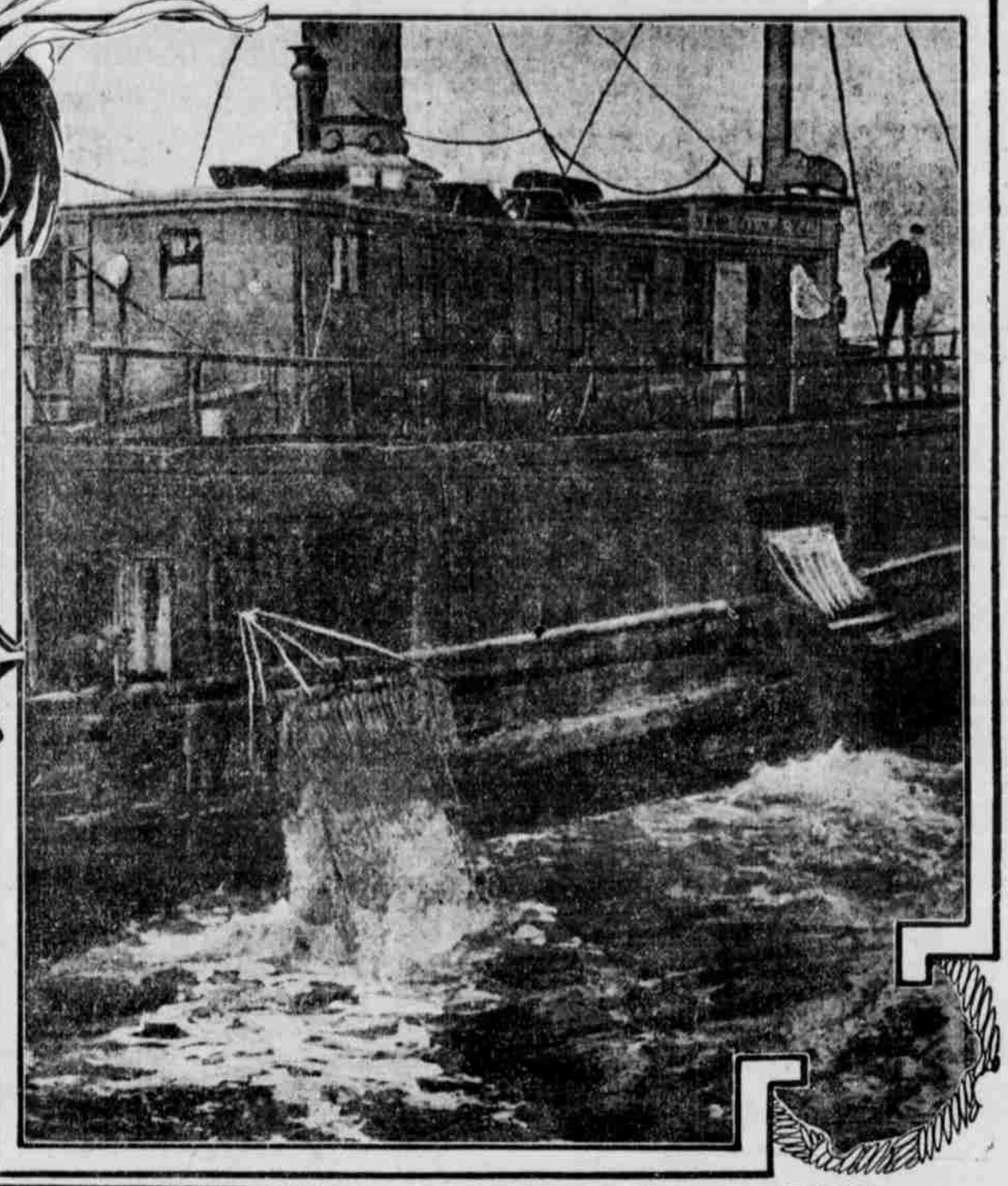
How Oysters Are "Captured"

BY CAPT. ELLIS MORSON

A PILE OF SEVERAL HUNDRED THOUSAND BUSHELS OF OYSTER SHELLS



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"ROLL six with a fringe," he yelled through a hole in the wall.

It was 12:02 a. m., September 1, 1908, and the first customer of the oyster season had broken the screen of mystery which surrounds the entrance

SCENE ON THE OYSTER DECK OF A STEAM DREDGE

STEAMING SLOWLY OVER AN OYSTER BED

A LARGE STEAM OYSTER DREDGE

of the bivalves into the daily menu of the man who patronizes the "hash-houses" of the big city.

The man who yelled through the hole in the wall was the waiter and an answering grunt from the blackness within told the man with the apron and the man with the appetite that the cook understood that what was wanted was half a dozen oysters, fried, with a liberal background of broken crackers rolled in the yolk of an egg.

The remarkable thing about the little incident related above is that oyster fishing in the waters of the east began at midnight, August 31, yet at 12:02 a. m., September 1—just two minutes after the long prongs had been dipped into the beds, a thousand miles away—a customer had been able to successfully gather a full sized meal of the delicacy.

In fact the first oyster farmer in the Chesapeake bay pulled up his first bivalve at the same time that the restaurant patron was doing the same, the only difference being in the distance.

This tale might lead skeptical persons to believe that either oysters are manufactured nowadays or else the midnight admirer of the mussel was being fed the produce of 1907.

The eater knew that it was September 1 and that oysters appear during each month the spelling of which contains an R. Hence he felt perfectly safe as the oysters one by one slid from the fork into his mouth.

Scientists tell us that many of the big dealers in oysters nowadays are putting the holdover product of the previous year into refrigerator plants in order that the interior longing for the delicacy previous to September 15 may be satiated. It is just about the middle of September when we first begin to taste the catch of the year. From then on until the first of May, including September, October, November, December, January, February—lots of oysters in February; it has two R's—March and April, we have the bivalve stewed, fried, baked, raw and in numerous other edible and inedible ways.

But scientific friends tell us to take our oysters in soup for the first two weeks of the oyster season. This, they say, will eradicate all possibility of evil effects. The man who has a cousin who is well acquainted with the brother of a young lady who once found a pearl in a raw oyster of course will revolt from the edict that early season bivalves should be eaten cooked, because boiling destroys the luster of the pearl and renders it valueless.

However there are few who do not relish oyster soup, even if they "simply CAN'T bear oysters," so many followed out the scientific ultimatum. Restaurant statistics have it that fried oysters are the most palatable to the men and women who patronize restaurants. Next comes the oyster stew and then the escalloped oyster, followed in succession by the raw and the baked product.

Scarcely less exciting than the rush for a western boom town site is the dash of the oystermen for the beds after midnight of the 31st of August. According to law, not a boat must move until the 1st of September has arrived.

First to reach the oyster beds, and first to gather a cargo and sprint for the wharf, means first in the market.

Consequently the oystermen strain every nerve to win in this bivalvular race. Midnight of August 31 finds the fleet ready for the run. Every oysterman has his boat as trim and ready as care can make it.

When the clock has ticked the month of August from the calendar the race is begun.

It is a run of several miles from the starting point to the oyster beds, and the few who are privileged to be present when the fleet gets under way participate in as pretty a moonlight race as is to be seen on the water.

With every stitch of canvas set, the boats skim along in the silent night, every skipper exerting himself to the limit of his seamanship to creep ahead of the field. To insure an even race to all, a United States guard boat watches the start and sees that no captain moves until the legal time. The boat also accompanies the fleet to watch the fishing and prevent any piratical tricks when the beds are reached.

Each oysterman must fish in his own ground when the boats reach the beds. How they are able to find their own particular fishing ground in the dark is a mystery to the landsman.

Sometimes they mistake some one else's bed for theirs. Hence the presence of the guard boat to prevent trouble between rival skippers who, either intentionally or by mistake, attempt to fish on the same ground.

In recent years many of the skippers of oyster boats have been fitted with steam and gasoline engines to beat their rivals who have to depend on sail power alone. A curious collection of engines were at first seen on the boats. Discarded gasoline machines that would have found their way to the scrap heap but for the oystermen had been oiled up and put in readiness for the season, and steam engines that were never designed for marine work helped the fortunate skippers who owned them to show a clean pair of heels to the sailing craft when the grand rush for the oyster beds began.

Now that the oyster season is well under way and the mollusk is obtainable fresh from the waters of the eastern coast of the United States, the topic of bivalves is naturally an engrossing one with the epicure. The reason that fishermen cannot pluck oysters between April and September is because the months of May, June, July and August are the spawning months.

Sometimes the bivalves are transplanted during the season and then the reproduction is often arrested.

An average oyster will produce 16,000,000 eggs and a very large one 60,000,000. When ripe the sexual products ooze from the genital openings and fertilization results from their accidental meeting in the water. Segmentation results in five or six hours in the production of a ciliated gastrula, a cup-shaped free-swimming organism, often carried by the currents to found new and remote beds. An embryonic shell soon appears, and the little oyster sinks to the bottom, where, if favorably situated, it becomes attached by its left valve and gradually assumes the adult form. The recently attached spat is 1-80 to 1-90 of an inch in diameter, and its subsequent growth varies with its environment. Single oysters on firm bottom become round and deep, but those in clusters or on soft bottom grow irregular and elongate. On undisturbed natural beds they grow in clusters, and the beds repose, as a rule, on a muddy substream upon which they have been built up from a comparatively small nucleus by the fixation, year after year, of the young upon the shells of their predecessors.

Oysters live from above low-water mark to a depth of 15 fathoms, where density is between 1.002 and 1.025 the optimum being from 1.011 to 1.022, and in a range of temperature which in Chesapeake bay extends from 32 degrees F. to 90 degrees F. The embryos and fry require more equable and stable conditions, the temperature required being between 68 degrees F. and 80 degrees F. The best and most productive beds are commonly in strong tidal currents, which disseminate the fry and food and keep the old shells clean enough to catch the spat. Diatoms constitute about 90 per cent. of the oyster's food, the rest consisting of other small plants and animals, and in the breeding season of its own eggs and fry. The latter are eaten by other mollusca also, and from its attachment until it reaches a large size the oyster is preyed upon by starfish, drills (Urosalpinx), drumfish, rays, and other aggressive enemies, while it wages a passive fight against starvation and suffocation with mussels, barnacles, sponges, worms, aquatic vegetation, and other prolific or luxuriant organisms growing on the beds.

Ostrea Virginica occurs from the Gulf of Saint Lawrence to the tropics, but between Cape Breton and Cape Cod the Sheepscot river, Maine, is its only locality. It has also been introduced in San Francisco bay, where it breeds to a limited extent.

The greatest production is in Chesapeake bay, where the principal yield is from the natural beds. Most of the oysters from New England and from New York and the outer coast of New Jersey are produced by planted beds; the entire yield of the Pacific coast is similarly derived, and there has been recently a considerable increase in oyster culture in New Jersey, Virginia and other states. The number of persons engaged in the industry is estimated at upward of 60,000, but as many of them are employed part of the year in other fisheries, farming, etc., definite statistics are not available. Baltimore is the most extensive market and New York has a considerable export trade with Europe.

The native oyster of the Pacific coast is a small thin-shelled species. In 1901 159,340 bushels, valued at $251,192, were marketed, principally on the Pacific coast.

The European oyster is found from Italy to Norway. It is a round thin-shelled species, more shapely than the American species, and hermaphroditic, first female and afterwards male. It is less prolific than its American relative and the young undergo considerable development in the mantle chamber of the mother. It thrives in water of full or almost full, organic density.

The oysters of Japan occur in shallow and moderately brackish or moderately salt water throughout the whole archipelago; and a very large salt water species is found in deep water. Many other species of Ostrea are found in temperate and tropical seas throughout the world.

The oyster family appears to have had its origin in some imperfectly known forms. The family is found also in the Permian. In the Triassic it is represented by a strongly plicated form, Alectryonia, which form becomes more prominent in the Jurassic and Cretaceous. There are also the common arcuate shells of Gryphae and Exogyra in the Jurassic and Cretaceous. Ostrea itself is known in the Mesozoic, but it attained its maximum of size and abundance in the Tertiary. The sandy maris of this period in the southwestern United States often contain great numbers of very large specimens of oysters. Owing to the exhaustion of the natural beds and their inability to supply the demand for oysters, it has been found necessary to resort to artificial methods of production, effecting, (1) an increase in the number of eggs fertilized; (2) an increase in the surfaces available for fixation, and also of the number of spat attaching; (3) the saving of spat and young oysters which would naturally fall victims to enemies and adverse physical conditions; and (4) the utilization of barren bottoms and naturally unavailable food supplies. But a small part of the area under water suitable for oysters has been utilized by nature, mainly for lack of suitable bodies for the attachment of the young. In the United States such barren bottom is utilized by clearing it of all rubbish and either planting 'cultch' to collect the spat, or else young oysters (seed), that they may improve in size, shape, and quality under conditions safer and more favorable than in their original environment. In certain places either method may succeed, but commonly a locality is better adapted to one than the other.

The most suitable bottom for oyster culture consists of firm mud or of a firm substratum with a thin surface of soft mud, but stable sandy bottom is usually deficient in food, loose sand drifts and covers the oysters, and very soft mud ingulfs and stifles them or produces inferior elongate stock. Mud naturally too soft may be utilized by distributing over it shells, sand, or other material, which, resting on or near the surface, furnishes a firm foundation upon which the growing oyster may repose in security. For spat-collecting it is frequently advantageous to use hard mud, gravel, or rocky bottom in shoal water, ill adapted to adult oysters from deficiency of food. The bottom being properly prepared and its boundaries marked with stakes or buoys, either system may be adopted to accord with circumstances. Generally seed-planting is more certain in its results and yields quicker returns to the grower. Seed-oysters vary from "blisters" one-half inch in diameter to individuals almost ready for market, but ordinarily they are between one and three inches long. They are obtained from planters making a specialty of seed production or from natural beds, their cost varying from ten cents to $1 per bushel, the larger culled stock, separate, well shaped, and free from rubbish, bringing higher prices and giving the best results.